8-249549

[Claim(s)]

[Claim 1]

The personal digital assistant equipment which possesses the detection means which detects the acceleration of movement at the time of a main part of personal digital assistant equipment being moved, and the alarm generating means started by the detecting signal of this detection means, and is characterized by things.

[Claim 2]

The personal digital assistant equipment according to claim 1 characterized by using a shock sensor for the detection means which detects the acceleration of movement at the time of a main part of personal digital assistant equipment being moved.

[Detailed Description of the Invention]

[0001]

[Industrial Application]

this invention relates to the personal digital assistant equipment provided with the theft prevention mechanism.

[0002]

this invention can be adapted for the personal computer of a portable laptop type or a note type etc.

It is applicable to optical instruments, such as portable electronic equipment, an electric product, and a camera, etc.

[0003]

[Description of the Prior Art]

In recent years, various utilization of the portable terminal unit which has the entry-of-data means called a hand held computer or a handy terminal and display means is carried out.

This kind of personal digital assistant equipment is a kind of computer constituted small and lightweight, since various data processing becomes possible at a carrying place, is used in various fields and, recently, has been used even in the outdoor shop floor.

Performing final processing by this kind of personal digital assistant equipment's building in storage, such as a RAM pack, memorizing data temporarily, and carrying out a direct file to a host computer as after treatment, or connecting it indirectly by the telephone line etc. is usually performed.

[0004]

This kind of small and lightweight personal digital assistant equipments are the subject which the opposite side which is easy to be held from that feature also has that a theft and the cure

against surreptitious use are big although the ease of carrying is the big feature, and intermediary きた.

That is, confidentiality, such as a password for connecting with a host computer, is accumulating advanced and important, very high information at this kind of personal digital assistant equipment in many cases, in case it is a theft, there is a danger that such information will be plagiarized and the cure theft prevention of a personal digital assistant equipment has been a big subject.

[0005]

In this conventional kind of personal digital assistant equipment, there was a way a chain tied the operator and the main part of a terminal unit of a terminal unit as a cure theft prevention.

However, the inconvenient method troublesome for an operator was always tied to the main part of equipment by the chain.

When a terminal unit was operated doing other work especially in an outdoor shop floor, with the terminal unit having, trouble might be caused to work and risk might follow on it depending on the case.

When using one set of a personal digital assistant equipment by two or more operators, the method of connecting with this chain was a very inconvenient method.

[0006]

Make a radio equipment build in a portable personal computer as other more effective cure theft preventions, it is made to communicate by central supervisory equipment and a central radio electric wave, and there is a method of measuring the theft prevention of a personal computer by monitoring a use place and a user continuously (open patent journal JP,5-150853,A, JP,5-176374,A, etc.).

Although this method was the method of being very effective compared with the method of connecting with the above-mentioned chain, in order to make a radio equipment build in, it was expensive, and was the method of spoiling portability, and was a method completely unsuitable to a small personal digital assistant equipment.

[0007]

When the detector which detects the amount of installation inclinations, installation pressure, and installation distance is made to build in a portable personal computer as other more effective cure theft preventions, this monitors the installation state of a personal computer continuously and the installation state changes, it is the method of measuring the theft prevention of a personal computer, by emitting an alarm (open patent journal JP,5-3534,A).

Although this method is a method which was excellent in the carrying nature compared with the method in which the above-mentioned radio equipment is made to build, since it is what supervises an installation state, it makes a complicated detector build in and needs complicated

signal processing.
Even if it was a method suitable for the personal computer of a portable laptop type or a note type, it was smaller and a carrying nature and economical efficiency were methods unsuitable to an important personal digital assistant equipment.
[0008]
[Problem(s) to be Solved by the Invention]
As described above, in a personal digital assistant equipment, an effective cure theft prevention is not fully given, but it has especially become indispensable in recent years a theft and surreptitious use coping with it, without [small size and] being lightweight, and high performance and a mass personal digital assistant equipment coming to appear, and spoiling portability. [of a low cost]
[0009]
this invention was not made in view of the above-mentioned actual condition, and aims at offering the personal digital assistant equipment provided with the theft prevention mechanism which was excellent in economical efficiency without spoiling portability.
[0010]
[Means for Solving the Problem]
When this invention is provided with means to detect the acceleration of movement at the time of a main part of personal digital assistant equipment being moved, and the means which emit an alarm when acceleration is detected by this means and tries to carry a main part of personal digital assistant equipment without permission, it prevents the theft of a main part of personal digital assistant equipment, and surreptitious use by reporting the unjust carrying outside.
[0011]
[Function]
Intact or the acceleration of movement by the shock and mechanical vibration in that case if a main part of personal digital assistant equipment is henceforth moved by setting the theft prevention mechanism as the operating state in case it separates from the place by a busy condition is detected for a main part of personal digital assistant equipment, from a main part of personal digital assistant equipment, an alarm can be emitted and unjust carrying can be barred.
[0012]
[Example]
With reference to a drawing, one case of the operation of this invention is explained below.
[0013]
Drawing 1 is a block diagram showing the composition of the theft prevention mechanism by one case of the operation of this invention, drawing 2 is a circuit diagram showing the example composition of the theft prevention mechanism shown in the above-mentioned figure 1, and

drawing 3 is a perspective diagram of the personal digital assistant equipment provided with the theft prevention mechanism shown in the above-mentioned figure 2.

[0014]

The acceleration detector 1 for a theft prevention mechanism to detect the acceleration of movement of a main part of personal digital assistant equipment in drawing 1,

The amplifying circuit 2 for amplifying the very small signal from the acceleration detector 1,

The warning circuit 3 which outputs an alarm signal when the signal from the amplifying circuit becomes beyond the value equivalent to predetermined acceleration,

It comprises an alarm 4 which generates an alarm by the alarm signal, a power supply 5 for supplying a power supply to each component of the above theft prevention mechanism, and a change machine 6 for effective/repealing the operating state of a theft prevention mechanism.

[0015]

The above-mentioned acceleration detector 1 changes into an electrical signal the acceleration of movement by the shock and mechanical vibration which are received when a detector is moved, and can use various acceleration sensors and shock sensors which are marketed.

For example, there are sensors, such as an electrostatic-capacity type, a piezo-electricity type, and a silicon piezoresistance type, in an acceleration sensor.

It is the sensor which formed a weight section, the beam section supporting it, and the piezoresistance section on the silicon substrate with a thin silicon piezoresistance type acceleration sensor in this, and was constituted, it is the sensor which changes into change of resistance the deformation which joins the beam section when acceleration joining a weight section by a piezo resistive effect, and since there are no mechanical moving parts, reliability is highly suitable as an acceleration detector of this invention.

moreover -- for example, a shock sensor applies the technology of an ultrasonic transducer, and since it does not have mechanical moving parts, it is a reliable sensor, and it is the sensor which can detect few shocks to high sensitivity by generating the voltage mostly proportional to acceleration when a sensor is moved, and it is suitable especially as an acceleration detector of this invention.

[0016]

The example of a theft prevention mechanism at the time of using the above-mentioned shock sensor for an acceleration detector is shown in the circuit diagram of drawing 2.

The main passive circuit elements of drawing 2 are explained sequentially from the left.

A shock sensor 21 is equivalent to the acceleration detector 1 of drawing 1 which generates the voltage proportional to acceleration when a sensor is moved as above-mentioned.

Amplifier 22 is equivalent to the amplifying circuit 2 of drawing 1 which amplifies the voltage proportional to the above-mentioned acceleration.

A comparator 23 is equivalent to a part of warning circuit 3 of drawing 1, and if the amplified voltage value is compared with the voltage value equivalent to predetermined acceleration and the former value exceeds the latter value, it will operate the transistor drive unit 24 of the following stage.

A transistor drive unit 24 is equivalent to a part of warning circuit 3 of drawing 1, and makes the transistor relay unit 25 for operating an alarm drive.

Although the alarm is omitted in drawing 2, the combination of a buzzer, a blink lamp, or both is sufficient, or IC for voice generating may be used.

Although the power circuit is omitted in drawing 2, electric power may be supplied to a power supply from the power supply of a main part of personal digital assistant equipment, and a standby battery different from the power supply of a main part is sufficient as it.

A switch 26 is equivalent to the change machine 6 of drawing 1, and turns on / turns off the operating state of a theft prevention mechanism by turning on / turning off the power supply to a theft prevention mechanism.

Although what turns on / turns off a power supply from a point of a power-saving design is good as for this switch 26, it may turn on / turn off only the power supply to an alarm.

Or a part of signal circuit, for example, a warning circuit, may be turned on / turned off.

The switch built into the main part of portable remote terminal equipment may be used for this switch 26, and it may switch on / switch off by inputting a specific code by the key stroke of a keyboard.

However, even if the power switch of a main part of personal digital assistant equipment is come by off, it is necessary to operate a theft prevention mechanism.

[0017]

As shown in figure 2 above, the whole component is also very small, is compact, and can be set to the main-part-of-personal-digital-assistant-equipment 31 interior which forms the whole theft prevention mechanism into a unit substrate, and is shown in drawing 3, and a theft prevention mechanism can also attach it in the free space of the substrate inside a personal digital assistant equipment further.

Or it can also carry out external to a main part of personal digital assistant equipment 31 from Ushiro.

[0018]

If drawing 3 is explained, as for the personal digital assistant equipment shown in this drawing, a question can utilize an outdoor indoor place for ｵﾌｨｽ, and wide range data collection and processing.

The composition builds in CPU and comprises the liquid crystal panel 32 (it serves also as a touch key) with EL, a power supply SW33, a ten key 34, a printer 35, and memory card 36

grade.

[0019]

In any case, since the theft prevention mechanism is [that the whole component is also very small and] compact, it is not almost to spoil the carrying nature of a personal digital assistant equipment.

The cure theft prevention which was very excellent in economical efficiency is realizable from the ability of the whole to be miniaturized [that the composition of a theft prevention mechanism is comparatively brief, and].

[0020]

When a shock sensor is used for an acceleration detector, a theft prevention mechanism will become still smaller and compact, and can realize the cure theft prevention which was further excellent in a carrying nature and economical efficiency.

[0021]

By fixing a theft prevention mechanism to the interior of a main part of personal digital assistant equipment also including a sensor, acceleration when a main part of portable remote terminal equipment is moved can be detected, and an alarm can be generated.

Since an alarm continues and occurs and is reported outside after turning on the above-mentioned switch and carrying out an effective setup of the theft prevention function until an alarm will occur, it will turn off the above-mentioned switch and a theft prevention function will be in an invalid established state, when beginning to carry [try] a main part of personal digital assistant equipment, a theft will be prevented.

[0022]

Except a just owner, once it detects a unjust carrying act by making unclear above-mentioned existence of a switch and an above-mentioned operating instruction except a just owner, since it is hard to call off an alarm operation, it will continue until an alarm generating operation will be from the detection time of the above-mentioned unjust carrying act in a battery electric discharge state, and a theft and surreptitious use will be prevented certainly.

[0023]

[Effect of the Invention]

As a full account was given above, when trying to carry a main part of personal digital assistant equipment from the regular position without permission in the easy personal digital assistant equipment of carrying according to this invention, the unjust carrying can be reported outside and the theft of a main part of personal digital assistant equipment and surreptitious use can be prevented.

[0024]

Except a just owner, if a unjust carrying act is detected, since it is hard to call off an alarm

operation, it will continue until an alarm generating operation will be from the detection time of the above-mentioned unjust carrying act in a battery electric discharge state, and a theft and surreptitious use will once be prevented certainly.

[0025]

The whole component of the theft prevention mechanism by this invention is also very small, and is compact, and it can form the whole theft prevention mechanism into a unit substrate, can set it to the interior of a main part of personal digital assistant equipment, and can also be further attached in the free space of the substrate of a personal digital assistant equipment, or can also carry out external to a main part of personal digital assistant equipment from Ushiro, and does not almost have spoiling the carrying nature of personal-digital-assistant-equipment original in any case.

The cure theft prevention which was very excellent in economical efficiency is realizable from the ability of the whole to be miniaturized [that the composition of a theft prevention mechanism is comparatively brief, and].

[0026]

When a shock sensor is used for an acceleration detector, a theft prevention mechanism will become still smaller and compact, and can realize the cure theft prevention which was further excellent in a carrying nature and economical efficiency.

[Brief Description of the Drawings]

[Drawing 1]

The block diagram showing the composition of the theft prevention mechanism by one case of the operation of this invention.

[Drawing 2]

The circuit diagram showing the example composition of the theft prevention mechanism shown in the above-mentioned figure 1.

[Drawing 3]

The perspective diagram of the personal digital assistant equipment provided with the theft prevention mechanism shown in the above-mentioned figure 2.

[Description of Notations]

1 Acceleration Detector

2 Amplifying Circuit

3 Warning Circuit

4 Alarm

5 Power Supply

6 Change Machine

21 Shock Sensor

22 Amplifier
23 Comparator
24 Transistor Drive Unit
25 Transistor Relay Unit
26 Switch
31 Main Part of Personal Digital Assistant Equipment

PATENT ABSTRACTS OF JAPAN

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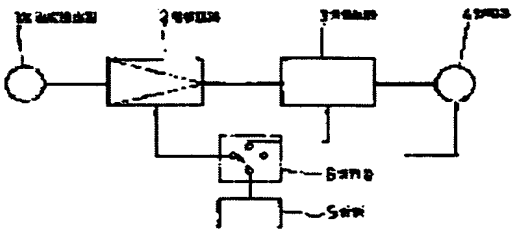
(71)Applicant : FUJIKURA LTD
(72)Inventor : YOSHIZAWA IZUMI

(54) PORTABLE TERMINAL EQUIPMENT

(57)Abstract:
PURPOSE: To prevent the main body of a portable terminal equipment from being stolen or illegally used by detecting the acceleration of movement in the case of moving the main body of portable terminal equipment, and starting the generation of an alarm according to a detection signal of detecting that acceleration.
CONSTITUTION: The acceleration of movement in the case of moving the main body of the portable terminal equipment is detected by an acceleration detector 1, the fine signal from that detector is amplified by an amplifier circuit 2 and when that amplified signal exceeds a value corresponding to a prescribed acceleration, an alarm signal is outputted by an alarm circuit 3. By that alarm signal, a warning is made by an alarm 4. Thus, when anyone tries to carry the main body of portable terminal equipment from a fixed position without any permission, that illicit action is reported to the outside and the main body of portable terminal equipment can be prevented from being stolen or illegally used.



LEGAL STATUS

[Date of request for examination]

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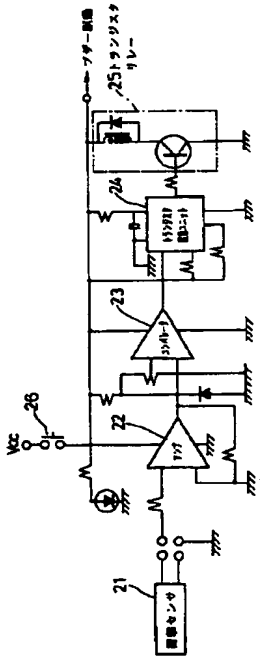
(54)【発明の名称】　携帯端末装置

(57)【要約】

【目的】　携帯性を損なわずに経済性に優れた盗難防止機構を備えた携帯端末装置を提供することを目的とする。

【構成】　携帯端末装置本体が動かされ際の運動の加速度を検出する手段と、同手段で加速度を検出したとき警報を発する手段とを備えて、携帯端末装置を許可無く持ち運ぼうとした際に、その不当な携行を外部に報知することにより、盗難・盗用を防止する。



【特許請求の範囲】
【請求項１】　携帯端末装置本体が動かされる際の運動の加速度を検知する検出手段と、同検出手段の検出信号により起動される警報発生手段とを具備してなることを特徴とする携帯端末装置。
【請求項２】　携帯端末装置本体が動かされる際の運動の加速度を検知する検出手段に衝撃センサーを使用したことを特徴とする請求項１記載の携帯端末装置。
【発明の詳細な説明】
【０００１】
【産業上の利用分野】本発明は、盗難防止機構を備えた携帯端末装置に関する。
【０００２】本発明は、携帯可能なラップトップ型あるいはノート型のパソコン等にも適応できる。さらには、携帯可能な電子機器、電気製品、カメラ等の光学機器などにも適用できる。
【０００３】
【従来の技術】近年、ハンドヘルドコンピュータ或いはハンデイターミナルと呼ばれる、データの入力手段と表示手段とを有する携帯可能な端末装置が各種実用化されている。この種の携帯端末装置は、小型、軽量に構成された一種のコンピュータであり、携行先で種々のデータ処理が可能になるため、様々な分野で使用されており、最近では屋外の作業現場でも使用されてきている。この種の携帯端末装置はＲＡＭパック等の記憶装置を内蔵して、一時的にデータを記憶しておき、後処理としてホストコンピュータに直接接続するか、電話回線等で間接的に接続するかして最終的な処理を行うことが通常行われている。
【０００４】この種の小型、軽量の携帯端末装置は携行の容易性が大きな特徴であるが、その特徴からもっていかれ易い反面もあって、盗難、盗用対策が大きな課題となつてきた。即ちこの種の携帯端末装置には、ホストコンピュータへ接続するためのパスワード等の機密性が非常に高い高度かつ重要な情報を蓄積している場合が多く、盗難の際にはこのような情報が盗用される危険性もあって、携帯端末装置の盗難防止対策が大きな課題となっている。
【０００５】従来のこの種の携帯端末装置に於いては、盗難防止対策として端末装置の操作者と端末装置本体とを鎖で繋ぐといった方法があった。しかしながら、常に装置本体に鎖で繋がれているのは操作者にとって煩わしく不便な方法であった。特に屋外の作業現場において他の作業をしながら端末装置を操作する場合、端末装置を持ったままでは作業に支障をきたして場合によっては危険が伴うこともあった。また１台の携帯端末装置を複数の操作者で使用する場合には、この鎖で繋ぐ方法は非常に不便な方法であった。
【０００６】他のより有効な盗難防止対策として、携帯用のパソコンに無線装置を内蔵させ、中央の監視装置と無線電波で交信させて、使用場所や使用者を常時監視することによりパソコンの盗難防止をはかる方法がある（公開特許公報特開平５－１５０８５３、特開平５－１７６３７４等）。この方法は、上記の鎖で繋ぐ方法に比べて非常に効果のある方法であるが、無線装置を内蔵させるため、高価で且つ携帯性を損ねる方法であり、小型の携帯端末装置には全く不適当な方法であった。
【０００７】更に他のより有効な盗難防止対策として、携帯用のパソコンに設置傾斜量、設置圧、又は設置距離を検出する検出器を内蔵させて、それによりパソコンの設置状態を常時監視して、その設置状態が変化したときに警報を発することによりパソコンの盗難防止をはかる方法である（公開特許公報特開平５－３５３４）。この方法は、上記の無線装置を内蔵させる方法に比べて携行性に優れた方法であるが、設置状態を監視するものであるため複雑な検出器を内蔵させて複雑な信号処理を必要とする。携帯可能なラップトップ型あるいはノート型のパソコンには適した方法であっても、より小型で携行性と経済性が重要な携帯端末装置には不適当な方法であった。
【０００８】
【発明が解決しようとする課題】上記したように携帯端末装置に於いて、有効な盗難防止対策が十分に施されておらず、特に近年では、小型、軽量で、かつ高性能、大容量の携帯端末装置が出現するに至り、携帯性を損なわずに低コストの盗難・盗用対策が必須となってきた。
【０００９】本発明は上記実情に鑑みなされたもので、携帯性を損なわずに経済性に優れた盗難防止機構を備えた携帯端末装置を提供することを目的とする。
【００１０】
【課題を解決するための手段】本発明は、携帯端末装置本体が動かされる際の運動の加速度を検出する手段と、同手段で加速度を検出したとき警報を発する手段とを備えて、携帯端末装置本体を許可無く持ち運ぼうとした際に、その不当な携行を外部に報知することにより、携帯端末装置本体の盗難、盗用を防止する。
【００１１】
【作用】携帯端末装置本体を未使用又は使用状態でその場所から離れる際に、盗難防止機構を作動状態に設定しておくことにより、以後、携帯端末装置本体が動かされると、その際の衝撃や機械的振動による運動の加速度を検知して携帯端末装置本体より警報を発して、不当な携行を妨げることができる。
【００１２】
【実施例】以下図面を参照して本発明の一実施例を説明する。
【００１３】図１は本発明の一実施例による盗難防止機構の構成を示すブロック図であり、図２は上記図１に示す盗難防止機構の構成例を示す回路図であり、図３は上記図２に示す盗難防止機構を備えた携帯端末装置の斜視

図である。

【００１４】図１において盗難防止機構は、携帯端末装置本体の運動の加速度を検知するための加速度検出器１と、その加速度検出器１からの微少な信号を増幅するための増幅回路２と、その増幅回路からの信号が所定の加速度に相当する値以上になったときに警報信号を出力する警報回路３と、その警報信号により警報を発生する警報器４と、以上の盗難防止機構の各構成要素に電源を供給するための電源５と、盗難防止機構の作動状態を有効／無効とするための切り替え器６とから構成されている。

【００１５】前記加速度検出器１は、検出器が動かされた際に受ける衝撃や機械的振動による運動の加速度を電気信号に変換するもので、市販されている種々の加速度センサや衝撃センサが利用できる。例えば加速度センサには、静電容量型、圧電型、シリコンピエゾ抵抗型等のセンサがある。この中でシリコンピエゾ抵抗型加速度センサは、薄いシリコン基板上に重り部とそれを支える梁部とピエゾ抵抗部を形成して構成したセンサで、重り部に加速度が加わったときの梁部に加わる変形をピエゾ抵抗効果により抵抗値の変化に変換するセンサであり、機械的な可働部品がないので信頼性が高く本発明の加速度検出器として適したものである。又例えば衝撃センサは、超音波振動子の技術を応用して、センサが動かされた時の加速度にほぼ比例した電圧を発生することでわずかな衝撃を高感度に検出できるセンサで、機械的な可動部品がないので信頼性の高いセンサで、本発明の加速度検出器として特に適したものである。

【００１６】前記衝撃センサを加速度検出器に使用した場合の、盗難防止機構の具体例を図２の回路図に示す。図２の主要な回路部品を左から順に説明する。衝撃センサ２１は、前述の通り、センサが動かされた時の加速度に比例した電圧を発生する図１の加速度検出器１に相当するものである。アンプ２２は、前記の加速度に比例した電圧を増幅する、図１の増幅回路２に相当するものである。コンパレータ２３は図１の警報回路３の一部に相当するもので、その増幅された電圧値と所定の加速度に相当する電圧値とを比較して前者の値が後者の値を越えると次段のトランジスタ駆動ユニット２４を作動させる。トランジスタ駆動ユニット２４は図１の警報回路３の一部に相当するもので、警報器を作動させるためのトランジスタリレーユニット２５を駆動させる。警報器は図２で省略してあるが、ブザー、または点滅ランプ、または両者の組み合わせでも良く、或いは音声発生用のＩＣを用いても良い。電源回路は図２で省略してあるが、電源は、携帯端末装置本体の電源から給電されても良く、本体の電源とは別の予備電池でも良い。スイッチ２６は図１の切り替え器６に相当するもので、盗難防止機構への電源供給をオン／オフすることにより、盗難防止機構の作動状態をオン／オフする。このスイッチ２６は、省電力設計の点から電源供給をオン／オフするものが良いが、警報器への電源供給のみをオン／オフするものでも良い。或いは信号回路の一部、例えば警報回路をオン／オフするものであっても良い。またこのスイッチ２６は、携帯用端末装置本体に組み込んだスイッチでも良く、キーボードのキー操作で特定コードを入力する事によりオン／オフするものでも良い。但し携帯端末装置本体の電源スイッチがオフになっていても、盗難防止機構を作動させるものである必要がある。

【００１７】以上図２に示したように、盗難防止機構は、構成要素全体でも非常に小型でコンパクトであり、盗難防止機構全体をユニット基板化して図３に示す携帯端末装置本体３１内部にセットすることができ、さらには携帯端末装置内部の基板の空きスペースに取り付けることもできる。或いは携帯端末装置本体３１に後から外付けすることもできる。

【００１８】図３について説明すると、この図に示す携帯端末装置は屋外屋内の場所を問はず、広範囲なデータ収集・処理に活用できる。その構成は、ＣＰＵを内蔵し、ＥＬ付液晶パネル３２（タッチキーも兼ねる）、電源ＳＷ３３，テンキー３４，プリンタ３５，メモリカード３６等から成る。

【００１９】いずれの場合も、盗難防止機構は、構成要素全体でも非常に小型でコンパクトであるため、携帯端末装置本来の携行性を損なうことはほとんどない。また盗難防止機構の構成が比較的簡潔であることと、全体が小型化できることから、非常に経済性に優れた盗難防止対策が実現できる。

【００２０】衝撃センサを加速度検出器に使用した場合、盗難防止機構は更に小型でコンパクトなものとなり、さらに携行性並びに経済性に優れた盗難防止対策が実現できる。

【００２１】盗難防止機構をセンサも含めて携帯端末装置本体内部に固定することにより、携帯用端末装置本体を動かされたときの加速度を検知して警報を発生することができる。前記のスイッチをオンして盗難防止機能を有効設定した後、携帯端末装置本体を持ち運び出そうとしたとき警報が発生し、前記のスイッチをオフして盗難防止機能が無効設定状態になるまで警報が継続して発生して外部に報知されることから、盗難が防止されることになる。

【００２２】前記のスイッチの存在及び操作方法を正当な所有者以外は解りにくくすることにより、一旦、不当携行行為を検知すると、正当な所有者以外は警報動作を解除しにくいため、上記不当携行行為の検知時から警報発生動作がバッテリー放電状態になるまで継続し、盗難、盗用が確実に防止される。

【００２３】

【発明の効果】以上詳記したように本発明によれば、携行の容易な携帯端末装置に於いて、携帯端末装置本体を

許可無く定位置から持ち運ぼうとした際に、その不当な携行を外部に報知して携帯端末装置本体の盗難、盗用を防止することができる。

【００２４】一旦、不当携行行為を検知すると、正当な所有者以外は警報動作を解除しにくいため、上記不当携行行為の検知時から警報発生動作がバッテリー放電状態になるまで継続し、盗難、盗用が確実に防止される。

【００２５】本発明による盗難防止機構は、構成要素全体でも非常に小型でコンパクトであり、盗難防止機構全体をユニット基板化して携帯端末装置本体内部にセットすることができ、さらには携帯端末装置の基板の空きスペースに取り付けることもでき、或いは携帯端末装置本体に後から外付けすることもでき、いずれの場合も、携帯端末装置本来の携行性を損なうことはほとんどない。また盗難防止機構の構成が比較的簡潔であることと、全体が小型化できることから、非常に経済性に優れた盗難防止対策が実現できる。

【００２６】衝撃センサを加速度検出器に使用した場合、盗難防止機構は更に小型でコンパクトなものとなり、さらに携行性並びに経済性に優れた盗難防止対策が実現できる。

【図面の簡単な説明】

【図１】本発明の一実施例による盗難防止機構の構成を示すブロック図。

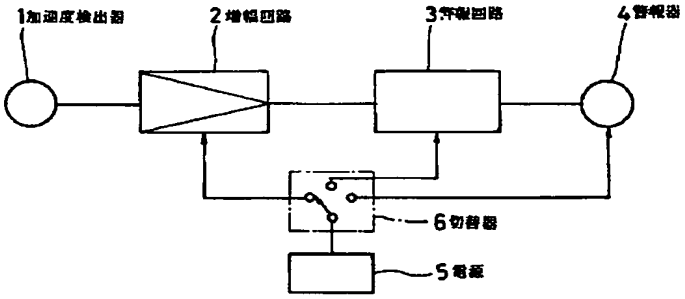
【図２】上記図１に示す盗難防止機構の構成例を示す回路図。

【図３】上記図２に示す盗難防止機構を備えた携帯端末装置の斜視図

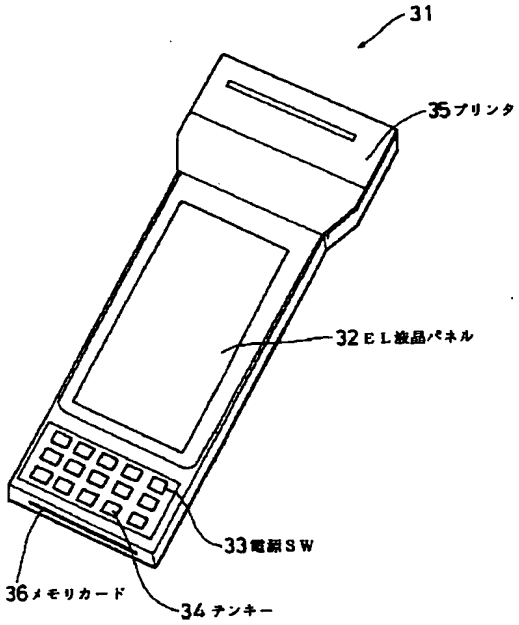
【符号の説明】

１　加速度検出器
２　増幅回路
３　警報回路
４　警報器
５　電源
６　切り替え器
２１　衝撃センサ
２２　アンプ
２３　コンパレータ
２４　トランジスタ駆動ユニット
２５　トランジスタリレーユニット
２６　スイッチ
３１　携帯端末装置本体

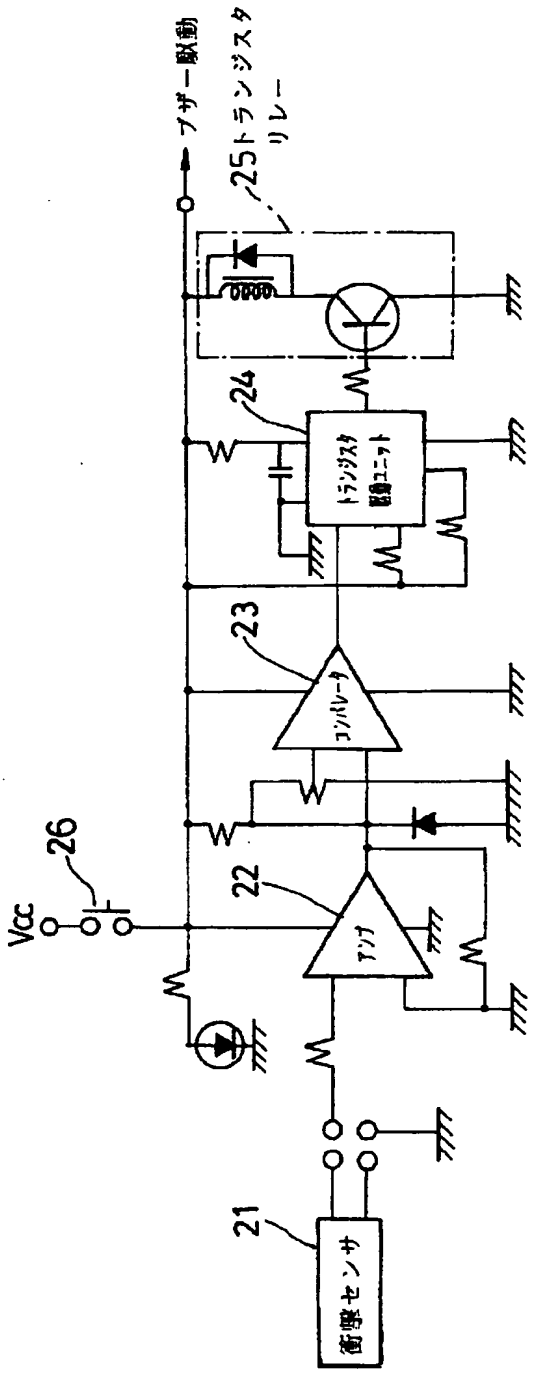
【図１】



【図３】



【図２】


ブザー駆動
25トランジスタ
リレー
24
トランジスタ
駆動ユニット
23
コンパレータ
26
Vcc
22
アンプ
21
衝撃センサ